

ABSTRACT

Java Backbone is a optical fiber communication systems transmission network that connect existing areas in Java Island and has a very important role in communication activities. Along with customers need toward communication activities will always increasing, especially in Java Island which has the highest population density in Indonesia, the evaluation and improvement the performance of optical fiber communication systems will be needed both of transmission networks and the ability of the devices, so the customers need are always met.

This final project evaluates the performance of optical fiber communication systems in Java Backbone ring-1 area, where the multiplexing technology used is Dense Wavelength Division Multiplexing (DWDM). Evaluation and analysis is based on some parameters i.e. link power budget, rise time budget, maintainability, availability, reliability, and the disturbance occurred.

From the evaluation results during the period January 1st, 2009 – April 30th, 2010, known the value of average MTTR (Repair) is 4.87 hours (meet the standard), the value of average MTTR (Recovery) is 9.69 hours (did not meet the standard) , and the average availability system is 99.67% (did not meet the standard). This indicates, that the quality of system performance was not good enough. It is also known during that period, the dominant disturbance that happened was a broken cable caused by 3rd party.

Key words: Optical Fiber Communication Systems, Java Backbone ring-1, DWDM, performance.